

# NEWSLINE

Published weekly for employees of Lawrence Livermore National Laboratory

Friday, November 7, 2003

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## Reflecting on Edward Teller's life

By Don Johnston

NEWSLINE STAFF WRITER

Friends, colleagues, admirers, congressional representatives and family paid tribute to the many dimensions of Dr. Edward Teller Monday, in a special commemoration at the Laboratory.

**Further coverage**  
— Pages 4,5

"We are here to reflect on the many aspects of a multi-dimensional man," said Director Michael Anastasio in opening the memorial ceremony, which was co-sponsored by the Laboratory, Stanford University's Hoover Institution and the University of California.

Teller was celebrated as a man of science, a teacher, patriot, an adviser to presidents, a family man, musician and poet in a tribute that included a recital of some of



JACQUELINE MCBRIDE/NEWSLINE

George Shultz, secretary of State under President Reagan, delivered the keynote eulogy for Dr. Edward Teller at Monday's commemoration.

Teller's favorite compositions played by a classical trio.

Keynote speaker George Shultz, secretary of State under President Ronald Reagan,

See **TELLER** page 4

## Dynes and Foley optimistic about UC's continued role managing the national labs

By Don Johnston

NEWSLINE STAFF WRITER

University of California President Robert Dynes and Adm. Robert Foley, UC vice president for Laboratory Management, told Lab employees the University is proceeding as if it will compete for the Department of Energy's contract to manage the national weapons labs.

Dynes and Foley addressed employees in an all-hands meeting Monday morning, Foley's first official day on the job.

Underscoring that a final decision to compete would have to come from the UC Board of Regents, Dynes said: "I'm committed to the University competing."

Energy Secretary Spencer Abraham announced last summer that the contract to manage Los Alamos National Laboratory would be put out for bid. The future of the contract to manage Lawrence Livermore is not clear. "There are some uncertainties for Livermore," Dynes said.

Key to the University's competing are the conditions in DOE's request for proposals, he said. "The conditions must have a strong science and technology base."

In an October press conference with UC media, Dynes said he had been reassured by Linton Brooks, National Nuclear Security Administration administrator, that the NNSA and DOE want UC to compete for the contract (see the Friday, Oct. 10 *Newsline*).

On Monday he reiterated that there are still issues, such as "how we're going to pay for competition," to

See **ALL-HANDS**, page 8

## Study finds marine plankton may have played key role in stabilizing modern climate

By Anne M. Stark

NEWSLINE STAFF WRITER

A trio of scientists, including a researcher from the Laboratory, has found that humans may owe the relatively mild climate in which their ancestors evolved to tiny marine organisms with shells and skeletons made out of calcium carbonate.

In a paper titled "Carbonate Deposition, Climate Stability and Neoproterozoic Ice Ages," in the Oct. 31 edition of *Science*, UC Riverside researchers Andy Ridgwell and Martin Kennedy, along with LLNL climate scientist Ken Caldeira, discovered that the increased stability in modern climate may be due in part to the evolution of marine plankton living in the

See **CLIMATE**, page 8

## Lab to host 'Atoms for Peace' symposium

By Stephen Wampler

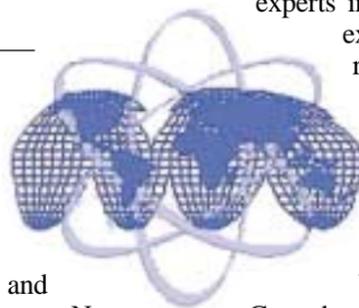
NEWSLINE STAFF WRITER

A high-profile group of experts will take a look next week at how Dwight Eisenhower's 1953 "Atoms for Peace" speech affected the world, particularly the world of nuclear technology.

The two-day symposium, "Atoms for Peace After 50 Years: New Challenges and Opportunities," will be held at the Laboratory Nov. 13-14 under the sponsorship of the Center for Global Security Research (CGSR).

Laboratory employees are invited to attend any or all of the panel discussions and talks, which will be held in the Bldg. 123 auditorium (see agenda at: [http://cgsr.llnl.gov/wkshp\\_eisenhower.html](http://cgsr.llnl.gov/wkshp_eisenhower.html)). Seating will be on a first-come, first-served basis.

Next week's symposium culminates a series of three workshops and one conference in 2003, in which



experts in science, technology and policy examined issues of defense, deterrence, nonproliferation, civilian applications, governance and others. The workshops attracted a wide range of views and opinions on the future of nuclear technology, advocates and opponents, optimists and pessimists.

Workshops were held at LLNL, near Gotemba, Japan, and in Saclay, France, with a concluding conference in September in Washington D.C.

"We've examined nuclear technology, both its benefits and risks, for national security and for civilian applications and the associated governance and public confidence issues," said Eileen Vergino, CGSR deputy director.

See **ATOMS**, page 8



**Extended work week policy revised**

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**HOME email facilitates contributions**

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**Plant Engineering Project update**

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## LAB COMMUNITY NEWS

## Weekly Calendar

Technical Meeting Calendar, page 4

**Sat/Sun 8-9** There will be a **scheduled power outage** Saturday beginning at 7 a.m. and ending at 3 p.m. Sunday. Buildings, trailers and transformers affected include: Bldgs. 151, 152, 154, 155, Trailer 1541 and transformers 740 and 74. A second scheduled power outage will run from 7 a.m. to 3 p.m. Sunday and will affect Bldg. 445 and transformers 901 and 1285. Air conditioning, heating and elevators also will be affected. For more information, contact Mark Cardoza, 3-0490.

**Tuesday 11** The HOME Campaign invites you to a **brown bag discussion** today at noon in the Discovery Center (Bldg. 651, adjacent to the East Gate.) in which representatives from three agencies — Tri-Valley Haven for Women, McHenry House for the Homeless and Bay Area Crisis Nursery — will present a roundtable discussion regarding the services they provide to address families in need. For further information, contact Anita Gursahani, 3-4955.

In honor of Veterans Day, **retired Air Force Col. George Sakalasis**, will be the special guest speaker at 11 a.m. today in the Bldg. 361 auditorium, discussing "From Second Lieutenant to Veteran — 30 years of service: AKA My Big Fat Greek Air Force Life." The talk is sponsored by LLNL's Armed Forces Veterans Network Group.

**Wednesday 12** The **Open Enrollment Benefits Fair** will be from 2-5 p.m. today in the West Cafeteria. It's an opportunity to get firsthand information on benefits from the insurance carriers. Representatives from the UC Savings Program, Social Security and UNCLE Credit Union will be on hand to answer questions. A presentation will also be given by the new legal plan provider today at noon in the Bldg. 543 Auditorium.

## Traveling resource center aims to help ailing workers

A Department of Energy-Department of Labor Traveling Resource Center will return to the East Bay Nov. 18-19, Jan. 20-21 and March 23-24. Representatives will be on hand to assist individuals with claims under the Energy Employees Occupational Illness Compensation Program Act. Workers who need help filling out claim forms can schedule appointments at the resource center by calling toll-free, (866) 697-0841, or drop in during office hours, 8:30 a.m. to 6 p.m. at the Four Points Hotel by Sheraton, 5115 Hopyard Road, Pleasanton.

The program helps DOE contractor employees apply for state workers' compensation benefits, if it is determined by an independent physician's panel that the worker sustained an illness caused by exposure to a toxic substance at a DOE facility. Several facilities in the Bay Area have been designated by DOE as locations for prospective worker claims: Lawrence Berkeley lab, Lawrence Livermore and Stanford's Linear Accelerator Center.

## RETIREES' CORNER

**Tony Schwarber** (ME '80) caught a channel catfish at Lake Chabot weighing 32.14 lbs., the largest fish caught in 25 years. The line was 7 lb. test, and the fish towed the boat for 20 minutes before coming to net.

**Don Faraudo** (Electronics Engineering, 1988) and wife, Nancy, took their travel trailer on a 58-day trip two-thirds of the way across the country. Having read books about Lewis and Clark, and since 2004 is the bicentennial of Lewis and Clark's departure, they decided to follow their trail. They headed east, stopping in Winnemucca to visit **Pet and Pat Stathis** (retired from LLNL Nevada). They followed the Platte River to Council Bluffs, Iowa, then followed the Missouri to its headwaters, and went over the continental divide to Fort Clatsop in Oregon.

They were shown around Clark's Lookout in Dillon, Mont. by **Katie Bump** (USFS), daughter of their neighbor Marie Ross and the late **Bill Ross** (retired from LLNL). They saw many historical locations, such as the gravesite of Sacagawea, where she died at about 95 and another where she had died at the age of 25.

*The Hydrogen Murder*, the first of **Camille Minichino's** periodic table mysteries, is now available in paperback. Number six, *The Carbon Murder* (of course) will be released in February 2004. A list of upcoming appearances in the Tri-Valley area is on Camille's Website, [www.minichino.com](http://www.minichino.com), managed by her able Webmaster **Dick Rufer**.

The November luncheon speaker will be Lily Pang from UCOP on the "Latest Health Plan Changes." Retirees should have received their open enrollment

packets in late October. If you did not, contact the health care facilitator at the Lab.

The dinner-dance was a success with 85 people in attendance. The Beets Catering food was good as was the music from Mark Simone. Plan on attending the winter dinner-dance on Jan. 30. Information on the event along with 2004 membership cards will be sent out in late November or early December. More than 300 people have already joined the Retirees Network for 2004. We always welcome new and renewing members. Only \$7 for a family membership. Applications are available on the Website: [www.llnl-retirees.org](http://www.llnl-retirees.org).

On vacation at the Ridge at Tahoe, **Gus and Jane** saw **Valerie Iverson** (EE, 1993?) at the Carson Valley Inn in Minden, Nev. After retirement she and her husband lived in Tahoe, then moved to Arnold, Calif. and are now living in Cameron Park, Calif. Back in Livermore, they ran into **Dave** (NAI, 1993) and **June Montgomery** (Finance, 1993) at Costco in Livermore. They are living in the Carson Valley, Nev. area.

Photos in the Retirees' Corner? *Newsline* says "yes," on a space-available basis (one per column) if the photo is good quality and is of interest to the broader Lab community (action photos of people engaged in activities as opposed to posed grip-and-grin shots).

Please send any news or input to Jane or Gus Olson. E-Mail: [AugustO@aol.com](mailto:AugustO@aol.com), or [JaneRubert@aol.com](mailto:JaneRubert@aol.com), phone: 925-443-4349, or snail mail 493 Joyce Street, Livermore, CA 94550.

## Changes planned for extended workweek

The Laboratory is proposing changes to its extended workweek-related policies. If adopted, the revised policies would define an "extended workweek schedule" as a non-permanent work schedule, planned by management in advance, in which scheduled work hours are anticipated to meet or exceed a minimum of 56 hours in each workweek for a minimum of five consecutive workweeks.

Assignment to the schedule would normally not exceed six months and employees would not normally be assigned to an Alternate Work Schedule (4/10s or 9/80s) at the same time.

No other changes would impact biweekly-paid employees, but monthly-paid employees would be affected in several ways. Those already approved for extended workweek pay would be considered "qualified" to receive extended workweek pay under the new policy, but could receive it only for those workweeks in which a minimum of 16 "overtime" hours (or a total of 56 effort hours) are worked and reported.

Those approved for the schedule under the revised policy could not receive extended workweek pay until their department head or division leader first verifies that the employee has worked a minimum of 56 hours per workweek in each of five consecutive workweeks.

Thereafter, the pay would be received only for workweeks in which 16 "overtime" hours (or a total of 56 effort hours) are worked and reported. Also, monthly-paid employees could not receive extended workweek pay for assignments that earn dislocation allowance unless "qualified" for the pay before or as a result of the assignment.

A summary and text of the proposed changes can be viewed at [http://www-r.llnl.gov/human\\_resources/hrsvcs/policydocs.html](http://www-r.llnl.gov/human_resources/hrsvcs/policydocs.html), along with frequently asked questions & answers. Employee comments on the proposed changes are welcome and may be directed to Virginia George at [george13@llnl.gov](mailto:george13@llnl.gov) until Nov. 21.

## IN MEMORIAM

## Ronald Edward Young

Ronald Edward Young, a 26-year Laboratory employee, died Oct. 30. He was 53.

Young was born Aug. 15, 1950, in Nashville, Tenn. He lived in Hayward for 25 years before moving to Tracy two years ago. He worked as a Lab mailroom supervisor for 26 years and also volunteered for the American Red Cross. He enjoyed camping, cooking and music.

Young is survived by his son, Christopher Stallworth of Tracy; his parents Rubyn Young of Jacksonville, Tenn. and Jewell Young of Cleveland; his sisters Rhonda Parker of Bedford, Ohio, and Rita Young of Mauldin, S.C.; friends, Samuel Johnson, Carolyn Hayes and Joyce Wesley.

Services were held earlier this week. Donations may be sent in trust for Christopher Stallworth, U.N.C.L.E. Credit Union, 7000 Greenville Road, Livermore, CA 94550.

## Newsline

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Web site: <http://www.llnl.gov/PAO/>



## AROUND THE LAB

## Donating to HOME Campaign is just a click away

By Alane Alchorn

IBS

For the first time, the LLNL HOME Campaign can accommodate payroll deduction contributions online. With a Web browser (Internet Explorer is recommended) and just a few mouse clicks, employees can make pledges and automatically become eligible for the weekly participation-prize drawings.

Campaign co-chairs Patricia Axelrod and Ed Helkenn are pleased to introduce E-Pledge, an innovation from the Laboratory Services Directorate, the 2003 sponsoring organization.

"This new alternative offers a tremendous opportunity for employees to very quickly and easily complete their donation without the extra hassles typically associated with any paper-based process," Axelrod said. "Employees who enjoy perusing Websites to find the latest information on charities they support can now also make their donation with minimal effort right away."

"Each donor who enters a pledge online is also entered automatically into the HOME incentive program," Helkenn said. "We have wonderful prizes this year and are pleased to seamlessly include all employees who donate through any means available."

## The winners of last week's HOME Campaign

Skaters	Costumes
1st place male, Patrick Chain, 7:30	<b>Most Humorous:</b> Deviled Egg: Stacey Roberts-Ohr, Math/Science Network
1st place female, Tiffany Rose, 8:20	<b>Most Colorful:</b> Uncle Sam: Tom Altenbach
1st place male master, Chuck McGregor, 7:15	<b>Most Creative:</b> Rosie the Riveters: Michele Bianchini-Gunn
1st place female master, (N/A)	Kelly Braswell
<b>Swimmers</b>	Janet Conrad
1st place male, Mike Bonner, 10:08	Ginny Dance-Rios
1st place female, Kelly Fedel, 11:45	Bonnie Pitrowski
1st place male master, Alek Shestakov, 10:31	<b>Most Patriotic:</b> Betsy Ross: Sue Steelman
1st place female master, Brynn Bollinger, 16:31	<b>Best-Multi-person:</b> American Flag: Margie Altenbach
<b>Runners</b>	Sherry Christensen
1st place male, Trevor Willey, 8:57	Wendy Dossey
1st place female, Tara Carreira, 11:29	Mary Gualco
1st place male master, Fred Mahler, 10:04	Chris Johnson
1st place female master, Jean Shuler, 14:09	Tencia Leon
<b>Site300 Runners</b>	Renee Lopez
1st place male, Stevan Mays, 12:51	Donna Matson
1st place female, Kristen Nave, 27:08	Ruth Wright
1st place male master, Tom Woehrl, 13:01	
1st place female master, Sandy Holm, 26:19	

Employees can go to the My LLNL portal at [https://www-r.llnl.gov/servlet/page?\\_pageid=54,56&\\_dad=portal&\\_schema=PORTAL](https://www-r.llnl.gov/servlet/page?_pageid=54,56&_dad=portal&_schema=PORTAL) and tap the HOME logo in the right-hand column; or go directly to <http://www-r.llnl.gov/home2003/> and then click "Donate Online."

This streamlined pledging system is accessible with an employee's Official User Name (OUN: surname1) and institutional password. The site is simple to navigate and requires only minimal information concerning a pledge.

Axelrod and Helkenn want to make it an easy experience to support the HOME Campaign.

"In our planning, we have tried to develop new creative ways to make HOME as simple, informative and friendly as possible," Helkenn said. "Employees have been so generous through the years and we believe it is our responsibility to make their donation as positive and seamless as possible. Many organizations depend on our contributions, including those supporting the realities of daily existence like food and shelter. Recent economic trends have not only squeezed budgets very tight, but also increased the number of people who need help."

Also new this year, employees who make one-time cash or check donations will see their contributions sent to their agency of choice a lot quicker. Those received by Nov. 14 will be sent to the agencies for processing before the Thanksgiving holiday. Another batch will be sent at the close of the HOME campaign and the final donations will be sent after Jan. 1.

For more information about E-Pledge or if you need assistance, call 3-HOME (3-4663).

## Technical Meeting Calendar

**Friday 7** **INERTIAL CONFINEMENT FUSION/HEDES PROGRAM**  
"The Dynamics of the Coherent Structures in the Rayleigh-Taylor Instability," by Snezhana I. Abarzhi, Center for Turbulence Research, Stanford, 10:30 a.m., Bldg. 219, room 163. Contact: Bruce Remington, 3-2712, or Louann Arredondo, 2-6710.

**BIOLOGY & BIOTECHNOLOGY RESEARCH PROGRAM**  
"Applications of Metabonomics in Drug Discovery and Development," by Jasna Fejzo, Vertex Pharmaceuticals, Inc, Cambridge, 11 a.m., Bldg. 361, room 1155. Contact: Rod Balhorn, 2-6284, or Monique Cosman, 3-1647.

**INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH**  
"Computational Models of Cellular Metabolic Fluxes," by Daniel Segre, Harvard Medical School, 10 a.m., Bldg. 361, room 1140 (property protection area). For more information see URL <http://www.llnl.gov/casc/calendar.shtml>. Contact: Bill Bosl (CASC), 4-5015, or Leslie Bills 3-8927.

**INSTITUTE FOR GEOPHYSICS & PLANETARY PHYSICS**  
"Shock-Induced Star Formation," by Chris Fragile, AX Division, Noon, Bldg. 319, room 205. Contact: Wil van Breugel, 2-7195, or Josie Morgado, 2-7181.

**Monday 10** **CENTER FOR APPLICATIONS DEVELOPMENT & SOFTWARE ENGINEERING**  
"LLNL Software Quality Policy and Plan," by Trish Larson, LLNL, director of CADSE, 10 a.m., Bldg. 451, room 1025 (property protection area). For more information see URL <http://www.llnl.gov/car/people/larson/>. Contact: Trish Larson (CADSE), 2-5816, or Terri Mendoza, 2-3269.

**Tuesday 11** **LC CUSTOMERS MONTHLY MEETING**  
9:30-11 a.m., Bldg. 451, White Room (property protection area). Contact: Teresa Delpha, 3-7329.

**Wednesday 12** **DIRECTOR'S DISTINGUISHED LECTURER SERIES**  
"Almost Absolute Zero: The Story of Laser Cooling and Trapping," by William D. Phillips, Nobel laureate, physics (1997), National Institute of Standards & Technology, group leader, Laser Cooling and Trapping Group, NIST Fellow, 3:30 p.m., Bldg. 123 auditorium. For more information go to the DDLS Web site: <http://lsto.llnl.gov/DDLS/index.html>. Contact: Mona Garcia, 2-5214, or Mary Callesen, 3-2810.

**Thursday 13** **PHYSICS & ADVANCED TECHNOLOGIES/N DIVISION**  
"Some Results from the Reaction  $20\text{Ne} + 24\text{Mg}$ ," by Roby Anne Elizabeth Austin, McMaster Uni-

versity, Department of Physics and Astronomy, 1:30 p.m., Bldg. 2128, Room 1000 (badge required). Contacts: John Becker, 2-9676, or Pat Smith, 2-0920.

**INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH**  
"Linear Algebra and Quantum Simulations," by Richard Scalettar, UC Davis, 10:30 a.m., Bldg. 451, room 1025 (property protection area). For more information see URL <http://www.llnl.gov/casc/calendar.shtml>. Contact: Louis Howell, (CASC) 2-6105, or Leslie Bills, 3-8927.

**Friday 14** **INSTITUTE FOR GEOPHYSICS & PLANETARY PHYSICS**  
"The Birth of Neutron Stars," by Todd Thomas, UC Berkeley, Noon, Bldg. 319, room 205. Contact: Wil van Breugel, 2-7195, or Sharon Taberna, 3-6290.

**INSTITUTE FOR SCIENTIFIC COMPUTING RESEARCH**  
"Cartesian Grids with Embedded Geometry," by Marsha Berger, Courant Institute New York University, 10 a.m., Bldg. 451, room 1025 (property protection area). For more information see URL <http://www.llnl.gov/casc/calendar.shtml>. Contact: Andy Wissink, (CASC) 3-5680, or Leslie Bills, 3-8927.

The deadline for the next Technical Meeting Calendar is noon, Wednesday.

# Commemorating Edward Teller



Astro Teller

*Untitled,*

*By Edward Teller, 1925*

*Recited by Astro Teller, grandson of Edward Teller*

*To seek, to wait, to mate.  
To want nothing.  
To love and stay alone.*

*To look at the world with eyes closed  
To see what no one has seen yet.  
To love, to adore wholly, purity —  
The wind, the cloud, the sun, and the dream.*

*To do what is right, not for the small change of  
money,  
Not for the eternal happiness beyond.  
To know there is no goal.  
To know there is no god.  
To worry there is no righteousness.*

*To know that thought is short, the will is weak, and  
That I depend on blind chance.  
And with stubborn faith to continue to believe  
That what I am doing is more than nothing  
And to be happy about the final repose  
That cures both pain and pleasure: death.*



Top, former Lab Director Mike May, current Lab Director Michael Anastasio and former Lab physicist Stirling Colgate. Above, former Lab Director John Foster and former Deputy Director Duane Sewell. Right, UC Vice President of Lab Management Robert Foley, George Shultz and Lab Director at Large Bruce Tarter.



Edward Teller's children, Wendy Teller and Paul Teller, addressed the crowd during the commemoration.



Top, Wendy Teller shares a moment with Gen Phillips. Above, Edward Teller's grandson, Astro Teller, Wendy Teller and Lab Director at Large Bruce Tarter. At left, U.S. Rep Ellen Tauscher talks with George Shultz.



## TELLER

*Continued from page 1*

gave a personal account of Teller as a "friend, colleague and adviser." Evoking Teller's early days in the United States as part of a "cabal of scientists from Hungary," Shultz said, "in the midst of giants, Edward Teller was a giant."

After Europe's rigid hierarchical research institutions, he said Teller "thrived and led" in America's "competitive meritocracy."

Shultz said Teller's role in the development of the Strategic Defense Initiative (SDI) "played a critical role" in bringing an end to the Cold War. Though the idea of SDI was "greeted tepidly" by the science community, "Teller lent strength to President Reagan's proposal."

Recalling how President Reagan leveraged SDI in arms talks with the Soviet Union, Shultz said, "it was very clear SDI caught Soviet attention. No doubt the presence of Edward Teller in that equation had something to do with that."

"He was a major part of the flowering of American science," Shultz concluded. "Edward Teller didn't just make a difference, he made a gigantic difference."

Kyle McSlarrow, DOE deputy secretary, lauded Teller's patriotism and determination to put science to work for the nation. "Teller loved science. Anyone who encountered that mind, that thirst, the search for solutions to the challenges of the day, knows with certainty his belief in science and service to mankind," McSlarrow said. "That search was not without hurt. But his commitment was unwavering."

"Perhaps most of all, Dr. Teller believed in hope for the future," he said. "In the end, he contributed to the greatest experiment of all, that of our representative democracy."

But Teller was also a symbol of freedom to many in Hungary and he retained strong ties to his native land. Ambassador Andras



Kyle McSlarrow

Simonyi recalled a recent conversation with Teller. "He was so proud that Hungary had stepped up to the plate and is moving with the United States to fight terrorism," Simonyi said. "It's a great honor to see the American and Hungarian flags here. Isn't it wonderful that this is happening in the memory of Edward Teller. We owe him so much for bringing our freedom."

Ferenc Gyurcsany, Hungarian Minister of Youth and Sport, called Teller's story "truly inspirational."

He was not a man to compromise," Gyurcsany said.



John Foster



Ferenc Gyurcsany

"Teller understood that to compromise in the face of injustice is to abandon your values, your integrity and your dreams. . . Teller fought against those who would murder freedom and destroy human dignity."

Rep. Ellen Tauscher said Teller's pioneering spirit laid the foundation for the Laboratory's current core missions in science-based stockpile stewardship. "Dr. Teller was a pioneer in using computational power to answer basic science questions. The Terascale Simulation Facility will be a fitting tribute to his work," Tauscher said, referring to the facility currently under construction that will house the next-generation supercomputer.

"His contributions live on through this laboratory and all of you," she said.

In a videotaped segment, Rep. Duncan Hunter called Teller "a great American" and marveled that he remained active as a scientist and adviser to politicians "right up to the last months of his life."

"Dr. Teller had a sense of purpose for this country," Hunter said, noting Teller was true to his ideas in both science and politics. "He never worried about criticism. It's a pretty rare man who can drive parallel tracks in politics and science."



Lowell Wood

of the defense community. "He addressed every important issue of national security as it arose," Foster said. "For nearly half a century he carried the burden of intellectual leadership of the national defense technological community. He never tired of rallying the Western alliance from a technological vantage point."

"Anyone who knew him, knew Dr. Teller plowed his row to the end," Foster said. In a video presentation, former Lab Director John Nuckolls recalled the words of President John F. Kennedy, who said, "the problems of the world will never be solved by skeptics and cynics whose horizons are limited by obvious realities. . . we need people who can create things that never were."

"That was the Laboratory and Edward Teller, and that what he was trying to create," Nuckolls said.

Bruce Tarter, associate director at large, echoed this idea and said, "Edward Teller had an unshakable faith in the power of science and technology to improve the world and the human condition."

"As director of the Laboratory, I felt a special responsibility to push our research and our science wherever it led in that direction, even if it went outside the lines often prescribed by our sponsors," Tarter said. "His greatest legacy and our greatest gift back to him is if that perspective can remain at the heart and soul of our Laboratory."

Wendy Teller, Teller's daughter, spoke of her father as a family man. "To me, Edward Teller will always be my dad," she said.

"My father went to work five days before he died. Many people say this is an indication of his dedication and determination," she said. "I see this as an indication of his dedica-

"He had a great sense of what this country's all about," Hunter said.

John Moores, chair of the University of California Board of Regents, recalled meeting Teller a few years ago. He leaned over and thanked Teller for saving so many American lives during the Cold War. As he stood up, Dr. Teller firmly pulled him back down and said, "You are incorrect. I saved many Russian lives."

Former Lab Director John Foster paid an emotional tribute to Teller's four decades of leadership

tion to his friends and colleagues. The fact that his friends made it possible for him to work until his last days was a source of joy to him. Your friendship was the cornerstone of my father's success and his happiness."

Paul Teller, Teller's son, spoke of his father's "incredible integrity" and said his father was not remembered as someone who was very modest. "But in measure of what we have heard today, he was incredibly modest."

He concluded by reading a



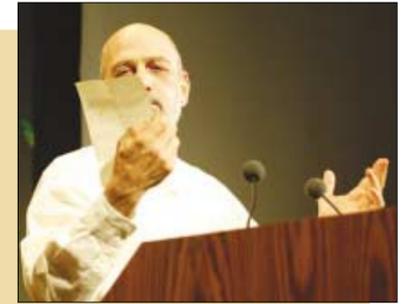
John Moores and Robert Dynes

poem his father had composed, recently found among some family papers (see accompanying story — photo of Paul and text of poem).

To see video of the ceremony and more pictures, see the Web at <http://www.llnl.gov/>



Above, George Shultz and Ambassador of Hungary Andras Simonyi discuss the program. Right, the crowd gathers before the event.



Paul Teller described how he found the poem below scrawled on a piece of paper in the back of a drawer at his father's home.

### A poem by Edward Teller

*Read by Paul Teller  
Son of Edward Teller*

*A fact without a theory  
Is like a ship without a rail  
Is like a boat without a rudder  
Is like a kite without a tail*

*A fact without a theory  
Is like an inconclusive act  
But if there's one thing worse  
in this confusing universe  
It's a theory without a fact.*

*Photos by Jacqueline McBride,  
Bryan Quintard, Marcia Johnson  
and Frank Nuñez*



# CLASSIFIED ADS

## AUTOMOBILES

1995 - Subaru LS wagon. AWD, New Tires & Brakes, Fresh Smog, Alpine CD Stereo, Loaded, Great Shape! 169kmi. \$550 under Bluebook. \$4500 510-569-0285

1994 - Mercury Sable LS, Sedan. Fully loaded with 10 disc CD changer. Keyless entry. \$4,500.00 OBO 209-883-1116

1994 - Infiniti Q45 - V8 4.5L fully loaded AT, ps/pb, air bags, cd changer, Bose stereo, leather interior, excellent condition 121k miles. \$7800 415-260-9369

1994 - Grand Voyager Van, loaded w/quad bucket seats, Infinity stereo system etc. 138,000 miles. Transmission rebuilt @ 100,000 miles. \$3700obo 925-606-1791

1995 - Acura Integra SE Coupe, 2 Door, White, Gray interior, Leather, Moonroof, AC, 130k. \$5400. 209-833-6443

1994 - Mazda Miata, Black w/itan leather, 5 spd., new top w/glass window, full power AC, new tires, excellent condition, htdp available. \$6200. 209-943-2166

1997 - El Dorado coupe, excellent condition, low miles all service records, new tires, alarm, all power, Bose sound. Must see. 12,800.00 510-537-7222

1992 - FORD Explorer XLT 4X4. Loaded. Lthr, new trans/pwr steering, 115k miles, Orig owner. \$4000, Good commute car(20 mpg/land for skiing, mountains, etc. 530-582-4586

1993 - Honda Accord Special Addition. 4 door, rear spoiler, new tires, brakes, timing belt etc., mint condition, single family owner. \$5000/OBO 925-373-4791

1993 - Saturn SL, 146k miles, GREAT commute car (36+ mpg). Extremely reliable, dealer maintained. Trailer hitch, AM/FM/cass, \$2000 OBO. 510-459-8733

1985 - Edelbrock performer intake manifold & top end of eng rebuilt. Blue w/ a few dents & faded spots. Needs smog/will pass. \$2500.00 O.B.O. 510-703-6805

1996 - Isuzu Rodeo 4WD White/Grey interi- or V6, 5spd, AC, PW,PL,PM. Runs great, good condition. Good tires, Tow hitch. \$6750/ OBO 925-373-1522

1999 - Chrysler 300M Loaded, Leather Interi- or, Premium Wheels, Excellent condition, 32,000 Miles \$13,995.00 925-846-7131

## AUTOMOBILE ACCESSORIES

Tailgators truck bed cover, bins and racks for full size truck. \$250. 925-449-0463

American racing aluminum rims, breaker series, Size 16 x 8, fit chevy pickup, 31 inch tall tires. \$ 500! 4. 209-368-4286

99-04 2.0L VV F1 engine parts: (New & unopened) 1)K&N Air filter \$45 (list \$72) 2)VW oil filter + drain plug \$10 (list \$13) All for \$50. 925-938-1451

2004 - (4)215/50R17 tires for sale. Have about 10 miles on them. Were too big for my wheel well. Paid 4105, sell for 2005, call in eve. 209-527-4990

## BICYCLES

Gary Fisher HooKooKoo Mountain Bike, Size 16.75in/42.5cm Rock Shox Quadra 21R, Shimano XTR rear derailleur, Thompson Elite seat post, Nice Bike \$150. 917-974-6317

Schwinn Paramount 60cm bike w/ Suntour and Shimano components \$150 925-606-0755

## BOATS

12 foot aluminum boat, depth/fish finder, rod holders, trailer, 8 horse motor, new electric motor 40 pound thrust and 2 oars. \$1,400 Ask for Lee 209-823-9470

Old working elec. start 35 HP Evinrude out-board motor w/ fuel tank \$400/obo, new 13 ft. steering cable never used \$200/obo. 925-766-8233

1971 Tahiti Bayliner. 85 Chrysler Force motor. Runs excellent. \$1500.00 or best offer. 209-234-7483

Fishing Boat 1989 17 ft. 50hp outboard excellent condition with trailer, trolling motor, fully equipped, must sell \$4,000 or

best offer. 209-239-5730

1977 Tahiti El Day Cruiser on a Road Runner Trailer w/out engine. Berkeley jet needs rebuild. No reasonable offer refused. 209-483-2293

Are you interested in frequent, individual bareboat charter of roughly 40ft twin-engine motor yacht berthed in Delta? Call for details & discussion. 925-484-1319

Laser 2 Sailboat. Good condition, \$1850 925-455-4559

## CAMERAS

Graftek 4x5 Crown Graphic camera with Schneider Kreuznach 135mm Xenar lens and many accessories. Excellent condition. Guaranteed. \$195.00 925-449-6032

## ELECTRONIC EQUIPMENT

Microsoft Windows XP Home edition, full version. Genuine and unregistered in box. \$125. 925-600-1817.

Apple LaserWriter IINT, works with MAC and PC with WIN98. Low page count and runs great. \$50. 926-371-7111

Emachines 633MHz, 64MB, 15inch monitor, 12xDVD stereo spkrs, 128k B L2 cache, 3D AGP56k modem, 10/100 enet, 2 USB game ports, 40GB HD, Win/ME, \$400/obo 925-766-8233

Drake Ham Radio HF Station: XLNT Cond. T4XR4 with MSA/AC4 speaker-power supply, FR4 digital readout and D-104 microphone included. \$250 firm. 925-447-9273

Sharp Zaurus SL-5500 PDA, 206MHz, 64MB, 64K colors, keyboard, stereo jack, Linux based. \$250 OBO. 209-545-3866

Antenna mast, up to 30 ft. long telescoping pole. Heavy galvanized. Secures with gym wires. Good condition. \$15. 925-634-2762

## GIVEAWAY

Small refrigerator. Approx. 28in. wide and 60in. tall. Good working condition, but not pretty. Great for garage. Free... 925-449-5441

2003 - Haynes Auto Repair Book--Free--Toyota Camry 1983-1981... Ford Tempo 1984-1987--Free-- 925-634-0423

Very old Macs. Working, upgraded, incl keyboard & mouse. Mac LC w/12 in. monitor. Performs 400 ethernet, 14 in. monitor. FREE! 209-832-5179

Three Mirrored closet doors - 96 in high by 36.5 in wide. 925-454-1608

Carpet, approx. 11x13, finished edges, off-white berber, good condition. 925-454-0877

FREE STUFF! 22 cu ft upright freezer, runs excellent. electric stove, 4 burners 925-484-0734

Camper and carpet pad. cab over camper for full size pickup, full bed, water light, carpet pad for med size mr. FREE 925-455-1355

Free firewood. Old fence boards. 925-456-5577

Free Toshiba 27 inch TV. Approximately 15 years old. One broken speaker. other than that it works good. 925-964-0534

Used kitchen cabinets, good for garage. You haul. 925-846-3548

Queen size futon w/mattress. Good condition. Free. No room for it. 925-513-4488

Coffee table and 2 end tables with glass inserts and lower shelves - free. 925-455-8158

## HOUSEHOLD

Emerson microwave, like new, runs great. Have too many, 25.00. Will bring to lab to show. 510-537-7222

White metal futon bed/sfo/obo, futon & cover \$80 firm, green Whirlpool frost free fridge \$20, water softener \$35. 925-766-8233

Oak furniture: Rolling computer cart, \$120, 2-drawer lateral file, \$170. 24x36 in book case, \$60. 925-294-9022

Baby Bjorn boys potty chair, adjustable safety gate, umbrella stroller, Girls London Fog parka size 3T, \$8 each. 925-454-0877

Bruener sofabad and love seat matched set,

sofabad opens up to queen-size bed, very attractive and in excellent condition. \$600 for both. 925-361-7111

Wood stove. Free standing, modern, efficient. Double doors with glass panels. \$375/OBO. 925-245-1114

Lane leather three piece sectional couch. Creamy taupe color with three recliners. Five months old, paid \$1,700.00 will sacrifice for \$1,000.00 209-883-1116

Shower stall, corner unit, 38 in. still in box, 1/2 price, \$150. 925-455-1355

WASHING MACHINE. Frigidaire, front loader, 1 year old. New \$650, will sell for \$250. 925-487-2246

Great for the Holidays... White Refrig/Freezer w/lcemaker, self-defrosting, 20.6 CuFt. Great Condition \$175. 209-832-8541

14.4 CuFt Kirkland Signature by Whirlpool purchased 10/20/03 moving - avail 12/1/03. Pd \$345 Sell \$300 w/receptl & registration card. 925-634-8162

TODDLER BED, birch color with a mattress, excellent condition, \$100; 6 drawer DRESSER (29 inch high) + mirror, walnut color \$70; 925-455-4947

Victorian Bedroom Suite Queen size large headboard/footboard, armoire, 5 drawer dresser with mirror, 2 nightstands, chest Orig \$2,500 sell \$800 OBO 925-449-9514

Maytag fridge: 21 ft. Top freezer. Adj. shelves on door, lights top and bot. Quiet, efficient, used 18mo. Highly rated in CR. B/O by 11/12. 925-784-4095

Amana Refrig, one year old, energy star runs great. Paid 750.00, asking 400.00 510-537-7222

Freezer. Full size, Up-right. In great condition. \$50.00 925-449-5441

Fabric window dressings for 4 windows plus a sliding glass door. Also 6 cellular window blinds. \$100 for all. 925-373-9224

FURNITURE: Antique Draw Table w/chairs; L-shaped couch w/bed, ex cond, green. Corell dishes, w/glasses to match(4) pot rack, hutch. Must sell. 925-443-9110

## MISCELLANEOUS

FILING CABINET - 4 drawer, steel, black. \$50 or best offer. 925-449-4003

3 new heavy-duty Gorilla storage racks 76(w)x 18(d)x 71(h). induction tune-up dwell meter, induction timing light (\$45 both) 926-371-7111

Refrigerator, good condition, keeps things very cold, beige, \$75 209-833-6443

American Tourist 3 piece set with keys and locks. 40.00 Antique diningroom light, hand painted, must see. 15.00 510-582-2938

Kenmore washer, very nice, heavy duty, large tub. 10 years old, works great, no rust. \$50 or best offer. 925-449-7661

Gollum life size replica: On top of a LOTR Two Towers DVD promo box. Talks and has motion sensor \$300. 925-456-5577

English Walnuts \$1/lb in shell. 925-443-1547

12 Ton Portaball Jack/Hoist. Swing arm. Pick-up mounted. \$100.00 925-413-2725

TotalGym 1000, \$50 925-606-7636

Wardrobe moving boxes. Used but clean. 3 for \$15. 925-373-9224

Car-top Carrier, Sears X-Cargo, like new, \$40/OBO. 925-373-0314

## MOTORCYCLES

1995 - Yamaha YZ 125. New plastic/ tank, graphics, seat, new tires, runs good. Asking \$2100 209-368-4286

1986 - 1986 Honda 200 on/off road, like new condition. Only made for two years 1st trials bike made. Has brand new tires. \$2500.00. 209-239-2812.

1998 H.D. Dyna Superglide FXD, detachable windshield/sh, serv manual, 13,500 miles \$12,000 or offer. 510-537-3144

2000 - Honda Nighthawk CB750 700 total miles, Fairing and Saddle Bags \$4500 OBO Chris Carlson 209-836-3069

## MUSIC INSTRUMENTS

Suzuki violin, 1/4 size, Wolf violin headrest (1/2 size), Violin Strings, all like new. Make offer 926-371-7111

guitars 3/4 size Amigo by Lotus \$120, full size Harmony \$80. 925-484-9028

## PETS & SUPPLIES

Large pet carrier, folding-Nylabone, up to 60 lbs. \$45. 925-294-9022

Free to a loving home. Corgi/Bassetji dogs. 1 year old. Littermates, 1 male, 1 female. Very cute, lovable and love kids. Need to stay together. 925-443-6052

Equestrian riding and driving lessons at Diamond Hills in Livermore using American Saddlebreds - beginner to advanced rider. 925-286-0711

8 week kitten tabby female has 1st set of shots and 7 month old male luxedo color fixed both are litter box trained and love people. 925-606-1507

5 dwarf hamsters need a good home. 2 female, 3 male. Hand raised. 4-1/2 mths old. \$5-\$7 ea. 209-823-8089

Dachshund mini, AKC, 9wks, 2nd shots, 1 female Silver&Black Dapple \$600, 1 female Piebald \$400 CASH Only. 925-513-1786

Appaloosa mare, 5 yrs., reg., prof. trained, athletic, good for all western, trails, etc. College bound and must sell her. A steal at \$3,200. 530-478-9658

## RECREATION EQUIPMENT

1995 8 1/2 Ft Fleetwood Cabover Camper. Fully Self Contained W/ New Honda Eu2000 Generator, A/C, Micro And Much More. Fits Short Or Long Beds \$4700 510-812-0091

Bowflex Powerpro with leg attachment, manual and instructional video. \$795 925-831-1833

Radio controlled gliders: 2-meter foam trainer and 2-meter balsamono-coat in perfect condition, 4-channel radio, all for \$200. 925-484-9028

## RIDESHARING

Express your commute, call 2-RIDE for more information or visit <http://www.r-rln.gov/tsmr>

Fremont - Seeking carpool from Fremont to L.L.N.L. Work hours: 8:00-5:00. Call 510-651-3678, ext. 3-9087

Lafayette - LaMOrinda Vanpool (also Walnut Creek stop at Rudgegar Rd): reclining seats, reading lights, 7-45-4-45, \$105/mo (pretax reduction available) 925-943-6701, ext. 2-3005

Danville - looking for driver/trailer to complete a four person carpool in the Diablo Rd. area. Work hours 8:15-5pm. 925-831-1569, ext. 2-9858

San Jose & Fremont - Space is available from San Jose and Fremont areas. Work hours: 7:30-4:30. Call 408-238-1909, ext. 3-3057

MANTECA - Rider/Driver needed 7:30AM-4:00PM work hours. 209-823-5593, ext. 3-8539.

## SERVICES

Bills Mobile Notary & Signing Agent. Have Stamp Will Travel, Available 24/7. 925-454-9483

Bath/Kit remodel, windows/doors, dry-rot/dry-wall repair, small electrical/plumbing jobs. 925-337-1291

Holidays are fast approaching. Time to paint your home. Excellent workmanship, reliable references. 22 years experience 510-537-7222

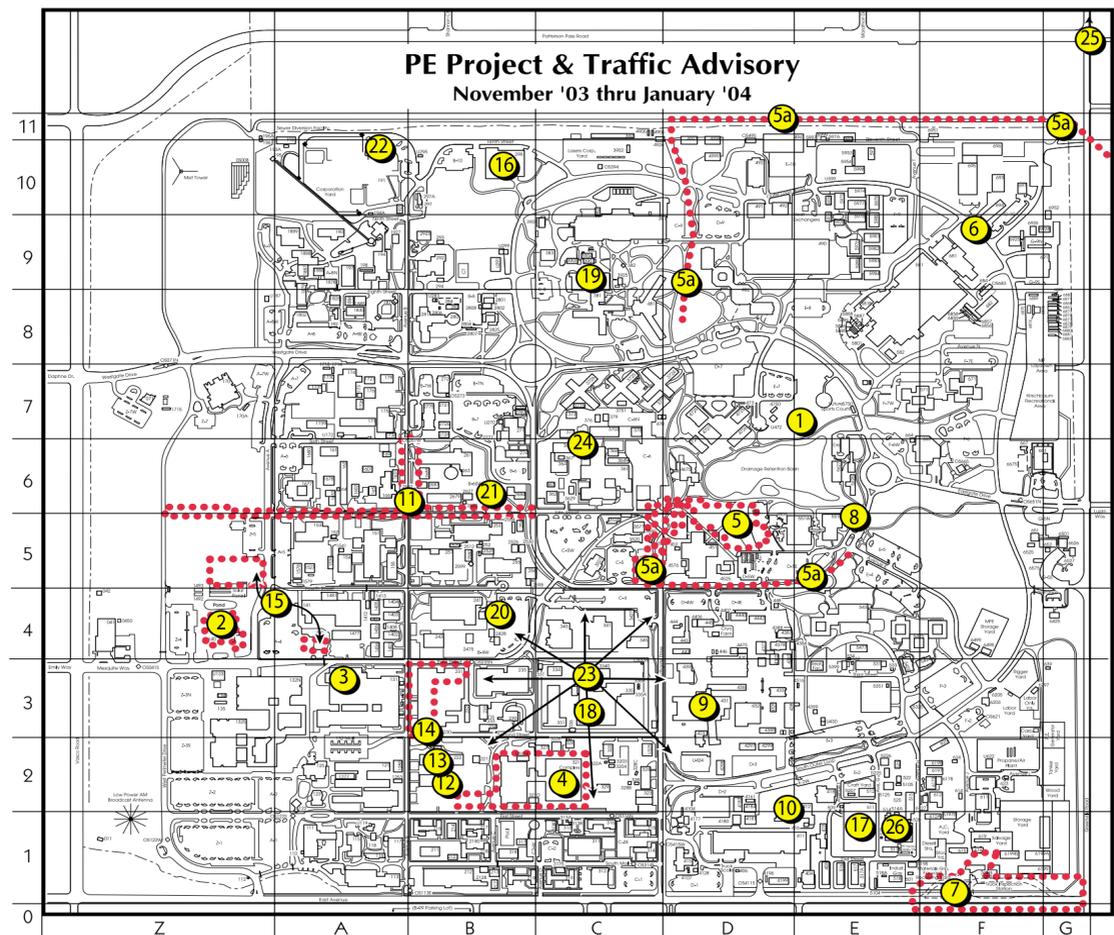
LICENSED DAYCARE-Manteca Meals provided, fun-learning activities for all ages. 209-239-7707

Dehydrator for drying fruit wanted. 925-373-0314

## SHARED HOUSING

Pleasanton - Room for rent. Private bathroom

See complete classified ad listings at <https://www.ais.lln.gov/newsline/ads/>



Item No.	Project	Grid Location	Contact Name/ Extension	Staging Area	Construction Start Date	Estimated Construction Completion	Impact
1	Bldg. 471, New Central Cafe	D-7, E-7	Barbara Pulliam, 3-4680	E-7 parking lot, north of retention basin	Started	Dec. '03	Parking in E-7 parking lot. Bldg. 471 activation in Dec. '03.
2	ISRF, Bldg. 140	Z-4 5	Roy Neyer, 2-8830	North of Bldg. 140, north of Mesquite Way between West Perimeter Drive and Avenue A	Started	Dec. '03	West Perimeter Drive closed to thru traffic north of Mesquite; Mesquite Way to close Feb. '04.
3	Bldg. 131 backlog reduction	A-3	Dave Hipple, 3-5042	Corp yard west of Bldg. 131 high bay	Started	Sept. '04	Impact to Third Street, north of Bldg. 131.
4	ETCU Bldg. 321	B-2, C-2	Paul Kempel, 3-0565	West of Bldg. 321 and in Bldg. 321 corporation yard	Started	Aug. '06	Local traffic delays.
5	TSF, Bldg. 453	D-5-6	Rick Visoria, 2-0939	East of Bldg. 451, north of South Inner Loop Road	Started	Sept. '06	Impacts to C-4, C-5, D-5E, D-5W, E-4 and E-5 parking lots, traffic delays on Inner Loop Road. Vehicle and foot traffic redirected at eastern end of Fifth Street and access road to Bldg. 451 corporation yard.
5a	TSF, Big Dig	C,D&E-5; D-8 11, E,F&G-11	Ian Watson, 3-2842	Various	Started	Apr. '04	Local impact varies with segment schedules. For details, call Ian Watson.
6	NIF and NIF Outer Loop Road	F-9	Vaughn Draggoo, 3-0185	Multiple locations	Started	TBD	North Outer Loop traffic is now open for normal access as of Oct. '03.
7	Truck Inspection Station, Bldg. 610	F-1	Bill Huddleston, 2-8107	Sales yard, south of Bldg. 616	Started	Jan. '04	Minor traffic delays during construction of truck inspection station.
8	Remediation Drilling	E-5 6	Jon Ulrech, 4-2816	Pathways east of Bldg. 551E & E-4 parking lot	Started	Nov. '03	Pathway detours and minor impact to the E-4 parking lot.
9	Bldg. 431 Demolition (Partial)	D-3	Matt Robison, 2-9975	TBD	Started	Sept. '05	Local area impacts.
10	Bldg. 412 Demolition	D&E-1 2	Mitch Waterman, 2-0444	TBD	Started	Sept. '05	Minimal impacts to area.
11	Fifth Street Rehabilitation and Extension	A,B&Z-5 6	Sheree Swanson, 3-5636	Between West Perimeter and Avenue A	Started	Mar. '04	Local area impacts; some road closures. Road work may impact facility access.
12	Bldg. 222, Center - Demolition	B-2	Matt Robison, 2-9975	East of Bldg. 222	Started	Jan. '04	Traffic impacts to First Street and Avenue B.
13	Bldg. 222, North - Demolition	B-2	Greg Stremel, 3-4454	East of Bldg. 222	Started	Sept. '04	Traffic impacts to First Street and Avenue B.
14	Roof LI, Bldg. 231	B-3	Charlie Brown, 2-8570	South of Bldg. 231 and across the street (north of Bldg. 222)	Started	Nov. '03	Intermittent local traffic delays and restricted parking on Second Street.
15	Replacement Building, Bldg. 142	A-4/Z-5	Danny Nguyen, 2-4883	Z-5 sector west of Trailer 1478 and Trailer 1578	Started	Feb. '04	Parking restrictions to the A-4 parking lot and intermittent traffic delay from laydown area to Bldg. 142.
16	Bldg. 298 Roof	B-10	Ed Sioson, 2-0609	Parking lot B-10, west of Bldg. 298	Started	Jan. '04	Parking and access to Bldg. 298.
17	Bldg. 511 Rehabilitation	E-1	Sheree Swanson, 3-5636	Around exterior of Bldg. 511	Started	Jan. '04	Parking restrictions and intermittent traffic delays.
18	Bldg. 332 Electrical Replacement	C-3	Gary Freeland, 2-9411	Tentatively in Super Block	Started	May '04	Periodic impact to accessing Bldg. 332.
19	Bldg. 381W, Hi-Bay Mds	C-8	Len Freitas, 2-0690	Bldg. 381 corporation yard	Started	Jan. '04	Local impact around Bldg. 381.
20	Replacement Bldg--Bldg. 242	B-4	Danny Nguyen, 2-4883	TBD	Started	Dec. '04	B-4 parking lot (north & northwest portion unavailable in Nov.; the entire lot closed in Dec. Traffic delays on Third Street and local area impacts.
21	Replacement Bldg. 264	B-6	Danny Nguyen, 2-4883	TBD</			

## ALL-HANDS

Continued from page 1

be resolved. "DOE and NNSA understand that's an issue. There are no solutions yet, but they are aware of the issues."

Foley, who now has primary responsibility for the University's management of the three national labs it administers on behalf of DOE and NNSA, received an ovation when he said: "I'm proceeding as if we're going to compete this thing, and we're going to win."

Asked if the University is considering partnering with another institution to compete for the contract, Dynes said: "We're seriously looking at partners that could bring strengths in the areas the University is seeking to improve."

Responding to a question about changes in management of the labs, Foley said he would explore options for "merging across the three labs" that would "eliminate redundancies."

In providing an overview of UC's role in managing the national labs, Dynes emphasized



JACQUELINE MCBRIDE/NEWSLINE

UC President Robert Dynes and UC Vice President of Lab Management Robert Foley answer questions from employees during an all-hands meeting Monday morning.

the University's historical role and the view that this is "an enormous service to the country."

"I don't know who I would feel comfortable with except the University taking responsibility," he said. "The intellectual horsepower of the University is unmatched anywhere and it's being brought to bear at the labs."

Acknowledging that "the past year or two have not been easy" for the labs, Dynes exhorted employees to remain focused on science and technology missions. "We should never lose sight of the missions."

Over the course of his 25-year association with the national labs, Dynes said: "I have developed a profound awe of this Laboratory and this comes from its entrepreneurial spirit and ability to take on high-risk projects."

Asked what researchers can do for UC, Dynes urged them to keep pushing the boundaries of science. "Stay out there. You have a distinct advantage over the academic community to move quickly on new things. Keep pushing. If everything works, you're not pushing hard enough."

## ATOMS

Continued from page 1

"We have identified important issues for the future, developed with input from the participants, including members of the current administration, and these have been received with a good deal of interest."

The opening day of the symposium will focus on the issues and forces that have shaped the rise of nuclear technology in the world over the five decades since Eisenhower's historic speech.

There will be three panels — Eisenhower: The Man and the Speech, International Security, and Civilian Applications — composed of individuals who played important roles during that period or have first-hand insight.

The Eisenhower panel, to be chaired by LLNL Associate Director at Large Bruce Tarter, will feature Susan Eisenhower, granddaughter of the late president and president of the Eisenhower Institute.

Other panel members will include Andrew Goodpaster, who served as Eisenhower's staff secretary and assistant for national security activities (by videoconference); Herb York, the first LLNL director; Ira Chernus, author of "Eisenhower's Atoms for Peace"; and former Navy Rear Adm. Robert Wertheim, who was director of the U.S. Navy Strategic System Project Office.

The International Security panel, to be led by Lab Director Michael Anastasio, will include former Lab Director John Foster, former LANL Director Sigfried Hecker, Wolfgang Panofsky, former deputy director of the Stanford Linear Accelerator; and Keith Payne, former deputy assistant Secretary of Defense for Forces Policy.

The day's third panel, on Civilian Applications, will be chaired by former Livermore Director Michael May. Panel members will include Martha Krebs, former Department of Energy assistant secretary for Energy Research; Bruno Pellaud, former deputy director general of the International Atomic Energy Agency; and Chauncey Starr, former head of the Palo Alto-based Energy Power Research Institute.

Rolf Ekeus, Sweden's high commissioner on national minorities for the Organization for Security and Cooperation in Europe, will be the opening day's luncheon speaker.

On the second day, panelists and speakers will discuss the challenges and opportunities of nuclear technology for the next 25 to 50 years.

A special panel, discussing the future of nuclear technology, will be chaired by Paul Longworth, deputy administrator of the National Nuclear Security Administration, and will feature Susan Eisenhower; J. D. Crouch, assistant secretary of Defense; former LANL Director John Browne; and John Holdren, professor of environ-

mental policy at Harvard University and of the John F. Kennedy School of Government, among others.

Dwight Eisenhower delivered his "Atoms for Peace" address to the General Assembly of the United Nations in December 1953 after returning from a summit with the United Kingdom and France.

In his speech, Eisenhower suggested that the nuclear weapons states help nations that would forgo the acquisition of nuclear weapons with acquiring the benefits of civilian nuclear applications, such as for energy, medicine and agriculture. He also called for the creation of an international atomic energy agency, which came into being five years later.

The CGSR's "Atoms for Peace After 50 Years" workshops were undertaken as the center's annual futures project, which focuses on the interactions of policy, national security, and science and technology.

This year's effort is the fifth annual futures program. Others have focused on Moore's Law and computing, globalization, deterrence, plus science and technology for national security.

"This year, we've had a great deal of international participation in our futures project," Vergino said. "Among the participating countries are the United Kingdom, France, Switzerland, Russia, Japan, South Korea, India, Israel and Sweden."

## CLIMATE

Continued from page 1

open ocean with shells and skeletal material made out of calcium carbonate. They conclude that these marine organisms helped prevent the ice ages of the past few hundred thousand years from turning into a severe global deep freeze.

"The most recent ice ages were mild enough to allow and possibly even promote the evolution of modern humans,"

Caldeira said. "Without these tiny marine organisms, the ice sheets may have grown to cover the Earth like in the snowball glaciations of the ancient past, and our ancestors might not have survived."

The researchers used a computer model describing the ocean, atmosphere and land surface to look at how atmospheric carbon dioxide would change as a result of glacier growth. They found that, in the distant past, as glaciers started to grow, the oceans would suck the greenhouse gas — carbon dioxide out of the atmosphere — making the Earth colder, promoting an even deeper ice age. When marine plankton with carbonate shells and skeletons are added to the model, ocean chemistry is buffered and glacial growth does not cause the ocean to absorb large amounts of carbon dioxide from the atmosphere.



PHOTO COURTESY OF NOAA

A glacier similar to this one would have likely covered the Earth if it weren't for small marine plankton made out of calcium carbonate.

near the equator, then most of the surface of the planet was likely covered in ice, making Earth look like a giant snowball, the researchers said.

Around 200 million years ago, calcium carbonate organisms became critical to helping prevent the earth from freezing over. When the organisms die, their carbonate shells and skeletons settle to the ocean floor, where some dissolve and some are buried in sediments. These deposits help regulate the chemistry of the ocean and the amount of carbon dioxide in the atmosphere.

However, in a related study published in *Nature* on Sept. 25, Caldeira and LLNL physicist Michael Wickett found that unrestrained release of fossil-fuel carbon dioxide to the atmosphere could threaten extinction for these climate-stabilizing marine organisms.

But in Precambrian times (which lasted up until 544 million years ago), marine organisms in the open ocean did not produce carbonate skeletons — and ancient rocks from the end of the Precambrian geological age indicate that huge glaciers deposited layers of crushed rock debris thousand of meters thick near the equator.



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